AMENDMENTS TO CLAIMS

1.   (Currently Amended)   A system for exploring a decision space and making decisions comprising:

a seeker for ~~acquiring~~ providing a plurality of candidates, each evaluated according to a plurality of evaluation criteria;

a filter for selecting a subset of evaluated candidates from said plurality of evaluated candidates, wherein said filter uses a form of dominance to exclude from said subset of evaluated candidates each candidate that is inferior to any other candidate; and

a viewer for displaying said subset of evaluated candidates in a plurality of linked scatterplots and enabling narrowing of said subset of evaluated candidates.

2.   (Currently Amended)   The system of claim 1 wherein said seeker provides ~~acquires~~ said plurality of candidates by retrieving ~~said~~ a plurality of evaluated candidates from a database.

3.   (Currently Amended)   The system of claim 1 wherein said seeker provides ~~acquires~~ said plurality of candidates by generating ~~said~~ a plurality of evaluated candidates using combinations of components from a device library.

4.   (Currently Amended)   The system of claim 3 wherein said device library further comprises encoded components, component behaviors, and composition schemes.

5.   (Currently Amended)   The system of claim 4 wherein said components are ~~defined by~~ encoded using a functional and compositional modeling language.

6.   (Currently Amended)   The system of claim 3 wherein said ~~device library supports~~ seeker enables composition of a device without reference to a specific environment.

7.   (Currently Amended)   The system of claim 3 wherein said ~~device library supports~~ seeker enables composition of a deployed device.

8.   (Currently Amended)   The system of claim 1 wherein said seeker ~~acquires~~ provides evaluated candidates using ~~an FCML~~ a functional and compositional modeling language simulator.

9.   (Currently Amended) The system of claim 8 wherein said ~~FCML~~ functional and compositional modeling language simulator is adapted to answer questions about evaluated candidates.

10.   (Currently Amended)   The system of claim 1 wherein said seeker uses distributed computation to evaluate ~~a large number~~ said plurality of candidates.

11.   (Original) The system of claim 1 wherein said filter is selected from the group consisting of classical dominance filter, strict dominance filter, superstrict dominance filter, selective superstrict dominance filter, discernible difference dominance filter, two-pass toleranced filter, and onionskin filter.

12.   (Currently Amended)   The system of claim 1 wherein said filter uses a toleranced dominance method to select said subset of evaluated candidates.

13.   (Original) The system of claim 1 wherein said viewer is adapted to use a multi-

attribute display.

14. (Currently Amended) The system of claim 1 wherein said linked scatterplots in said viewer is adapted to display aare trade-off scatterplottrade-offs of said subset of evaluated candidates.

15. (Canceled) The system of claim 14 wherein said viewer is adapted to display a first selected region of candidates from a first scatterplot in a first color, a second selected region of candidates in a second scatterplot in a second color, an intersection between said first selected region and said second selected region in a third color, and unselected candidates in a fourth color.

16. (Original) The system of claim 1 wherein said plurality of candidates is designs for hybrid electric vehicles.

17. (Original) The system of claim 1 wherein said plurality of candidates is selected from the group consisting of candidates for a design task, candidates for planning task, candidates for a purchasing task, and candidates for alternative hypotheses.

18. (Currently Amended) A system for exploring a decision space and making decisions comprising:

a seeker for acquiringproviding a plurality of candidates composed according to specifications and constraints and evaluated according to a plurality of evaluation criteria; and

a filter for selecting a subset of candidates from said plurality of candidates; and

a viewer for displaying said subset of candidates in a plurality of linked

scatterplots and exploring said subset of candidates.

19.   (Currently Amended) The system of claim 18 ~~further comprising~~wherein said ~~a~~

viewer ~~for displaying said subset of candidates and enabling~~enables narrowing

of said subset of candidates.

20.   (Original) The system of claim 19 wherein said viewer is adapted to use a multi-

attribute display.

21.   (Canceled) The system of claim 19 wherein said viewer is adapted to display a

trade-off scatterplot of said subset of candidates.

22.   (Canceled) The system of claim 21 wherein said viewer is adapted to display a

first selected region of candidates from a first scatterplot in a first color, a

second selected region of candidates in a second scatterplot in a second color,

an intersection between said first selected region and said second selected

region in a third color, and unselected candidates in a fourth color.

23.   (Currently Amended)   The system of claim 18 wherein said seeker

~~acquires~~provides said plurality of candidates by retrieving said plurality of

candidates from a database.

24.   (Currently Amended)   The system of claim 18 wherein said seeker

~~acquires~~provides said plurality of candidates by generating said plurality of

candidates using combinations of components from a device library.

25.   (Currently Amended) The system of claim 24 wherein said device library further

comprises encoded components, component behaviors, and composition

schemes.

26. (Currently Amended) The system of claim 25 wherein said components are ~~defined by~~encoded using a functional and compositional modeling language.

27. (Currently Amended) The system of claim 24 wherein said ~~device library supports~~seeker enables composition of a device without reference to a specific environment.

28. (Currently Amended) The system of claim 24 wherein said ~~device library supports~~seeker enables composition of a deployed device.

29. (Currently Amended) The system of claim 18 wherein said seeker ~~acquires~~provides candidates using ~~an FCML~~a functional and compositional modeling language simulator.

30. (Currently Amended) The system of claim 29 wherein said ~~FCML~~functional and composition modeling language simulator is adapted to answer questions about candidates.

31. (Currently Amended) The system of claim 18 wherein said seeker uses distributed computation to evaluate ~~a large number~~said plurality of candidates.

32. (Original) The system of claim 18 wherein said filter is selected from the group consisting of classical dominance filter, strict dominance filter, superstrict dominance filter, selective superstrict dominance filter, discernible difference dominance filter, two-pass toleranced filter, and onionskin filter.

33. (Original) The system of claim 18 wherein said filter uses a toleranced dominance method to select said subset of candidates.

34. (Original) The system of claim 18 wherein said plurality of candidates is designs for hybrid electric vehicles.

35. (Original) The system of claim 18 wherein said plurality of candidates is selected from the group consisting of candidates for a design task, candidates for planning task, candidates for a purchasing task, and candidates for alternative hypotheses.

36. (Currently Amended) A system for exploring a decision space and making decisions comprising:

a seeker for providing a plurality of candidates composed using a functional and compositional modeling language and evaluated according to a plurality of evaluation criteria;

a filter for selecting a subset of candidates from a said plurality of candidates, wherein said filter uses a form of dominance to exclude from said subset of candidates each candidate that is inferior to any other candidate; and

a viewer for displaying said subset of candidates and enabling narrowing of said subset of candidates.

37. (Canceled) The system of claim 36 further comprising a seeker for acquiring said plurality of candidates.

38. (Canceled) The system of claim 37 wherein said seeker acquires said plurality of candidates by retrieving said plurality of candidates from a database.

39. (Currently Amended) The system of claim 36 wherein said seeker acquires said plurality of candidates by composing said plurality of candidates using

combinations of components from a device library.

40. (Canceled) The system of claim 39 wherein said device library comprises components, component behaviors, and composition schemes.

41. (Canceled) The system of claim 40 wherein said components are defined by using a functional and compositional modeling language.

42. (Currently Amended) The system of claim 39 wherein said ~~device library supports~~seeker enables composition of a device without reference to a specific environment.

43. (Currently Amended) The system of claim 39 wherein said ~~device library supports~~seeker enables composition of a deployed device.

44. (Canceled) The system of claim 36 wherein said seeker acquires candidates using an FCML simulator.

45. (Currently Amended) The system of claim ~~44~~ 36 ~~wherein said FCML~~ further comprising a simulator ~~is~~ adapted to answer questions about candidates.

46. (Currently Amended) The system of claim ~~37~~ 36 wherein said seeker uses distributed computation to evaluate ~~a large number~~said plurality of candidates.

47. (Original) The system of claim 36 wherein said filter is selected from the group consisting of classical dominance filter, strict dominance filter, superstrict dominance filter, selective superstrict dominance filter, discernible difference dominance filter, two-pass toleranced filter, and onionskin filter.

48. (Original) The system of claim 36 wherein said filter uses a toleranced dominance method to select said subset of candidates.

49.   (Original) The system of claim 36 wherein said viewer is adapted to use a multi-attribute display.

50.   (Original) The system of claim 36 wherein said viewer is adapted to display a trade-off scatterplot of said subset of candidates.

51.   (Canceled) The system of claim 50 wherein said viewer is adapted to display a first selected region of candidates from a first scatterplot in a first color, a second selected region of candidates in a second scatterplot in a second color, an intersection between said first selected region and said second selected region in a third color, and unselected candidates in a fourth color.

52.   (Original) The system of claim 36 wherein said plurality of candidates is designs for hybrid electric vehicles.

53.   (Original) The system of claim 36 wherein said plurality of candidates is selected from the group consisting of candidates for a design task, candidates for planning task, candidates for a purchasing task, and candidates for alternative hypotheses.

54.   (Currently Amended) A method system for exploring a decision space and making decisions comprising:

a seeker for acquiringproviding a plurality of candidates composed using a functional and compositional modeling language and evaluated according to a plurality of evaluation criteria;

a viewer for displaying said subset of candidates in a plurality of linked scatterplots for comparison and selection of subsets for further examinationand

~~enabling narrowing of a subset of candidates from said plurality of candidates~~.

55.   (Canceled) The system of claim 54 wherein said seeker acquires said plurality of candidates by retrieving said plurality of candidates from a database.

56.   (Currently Amended) The system of claim 54 wherein said seeker acquires said plurality of candidates by generating said plurality of candidates using <u>combinations of</u> components from a device library.

57.   (Canceled) The system of claim 56 wherein said device library comprises components, component behaviors, and composition schemes.

58.   (Canceled) The system of claim 57 wherein said components are defined by using a functional and compositional modeling language.

59.   (Currently Amended) The <u>method</u> ~~system~~ of claim 56 wherein said ~~device library supports~~ <u>plurality of candidates is composed</u> ~~composition of a device~~ without reference to a specific environment.

60.   (Currently Amended) The <u>method</u> ~~system~~ of claim 56 wherein said ~~device library supports~~<u>plurality of candidates is composed</u> ~~composition of~~ <u>using</u> a deployed device.

61.   (Currently Amended) The <u>method</u> ~~system~~ of claim 54 wherein said <u>plurality of</u> ~~seeker acquires~~ candidates <u>is composed</u> using ~~an FCML~~<u>a functional and compositional modeling language</u> simulator.

62.   (Currently Amended) The <u>method</u> ~~system~~ of claim 61 wherein said ~~FCML~~ <u>functional and compositional modeling language</u> simulator is adapted to answer questions about candidates.

63. (Currently Amended) The method ~~system~~ of claim 54 wherein said ~~seeker uses~~plurality of candidates is evaluated using distributed computation ~~to evaluate a large number of candidates~~.

64. (Currently Amended) The ~~system~~ method of claim 54 further comprising a filter for selecting said subset of candidates from said plurality of candidates.

65. (Currently Amended) The method ~~system~~ of claim 64 wherein said filter is selected from the group consisting of classical dominance filter, strict dominance filter, superstrict dominance filter, selective superstrict dominance filter, discernible difference dominance filter, two-pass toleranced filter, and onionskin filter.

66. (Currently Amended) The method ~~system~~ of claim 64 wherein said filter uses a toleranced dominance method to select said subset of candidates.

67. (Currently Amended) The method ~~system~~ of claim 54 wherein displaying said subset of candidates in a plurality of linked scatterplots~~said viewer is adapted to use~~ comprises using a multi-attribute display.

68. (Canceled) The system of claim 54 wherein said viewer is adapted to display a trade-off scatterplot of said subset of candidates.

69. (Canceled) The system of claim 68 wherein said viewer is adapted to display a first selected region of candidates from a first scatterplot in a first color, a second selected region of candidates in a second scatterplot in a second color, an intersection between said first selected region and said second selected region in a third color, and unselected candidates in a fourth color.

70. (Currently Amended) The <u>method</u> <s>system</s> of claim 54 wherein said plurality of candidates is designs for hybrid electric vehicles.

71. (Currently Amended) The <u>method</u> <s>system</s> of claim 54 wherein said plurality of candidates is selected from the group consisting of candidates for a design task, candidates for planning task, candidates for a purchasing task, and candidates for alternative hypotheses.

72. (Currently Amended) A method for exploring a decision space and making decisions including the steps of:

acquiring<u>providing</u> a plurality of candidates with values for various attributes <u>evaluated according to a plurality of evaluation criteria</u>;

selecting one of a plurality of filters to locate a subset of candidates from said plurality of candidates<u>, wherein said selected filter uses a form of dominance to exclude from said subset of candidates each candidate that is inferior to any other candidate</u>; and

displaying said subset of candidates <u>in linked scatterplots</u> for comparison and selection of subsets for further examination.

73. (Currently Amended) The method of claim 72 wherein the step of <s>acquiring</s><u>providing</u> a plurality of candidates includes the step of retrieving said plurality of candidates from a database.

74. (Currently Amended) The method of claim 72 wherein <s>the step of acquiring</s><u>said</u> <s>a</s> plurality of candidates <s>includes the step of evaluating a plurality of candidates</s><u>is acquired</u> using a seeker.

75. (Currently Amended) The method of claim 72 wherein ~~the step of acquiring~~ ~~a~~said plurality of candidates ~~includes the step of~~is ~~generating~~ generated a ~~plurality of candidates~~ using a device library.

76. (Currently Amended) The method of claim 75 wherein said device library ~~includes~~ further comprises encoded components, component behaviors~~,~~ and composition schemes.

77. (Currently Amended) The method of claim 72 further including the step of defining components for said candidates using a functional and compositional modeling language.

78. (Currently Amended) The ~~system~~ method of claim 75 wherein said ~~device~~ ~~library supports~~plurality of candidates ~~composition of a device~~is composed without reference to a specific environment.

79. (Currently Amended) The method of claim 75 wherein said ~~device library~~ ~~supports~~plurality of candidates is composed using ~~composition of~~ a deployed device.

80. (Currently Amended) The method of claim 72 wherein the step of ~~generating~~ providing said plurality of candidates includes the step of providing ~~generating~~ candidates using ~~an FCML~~a functional and compositional modeling language simulator.

81. (Currently Amended) The method of claim 80 further including the steps of asking questions about said plurality of candidates and receiving answers to them from said functional and compositional modeling language ~~FCML~~

simulator.

82.   (Original) The method of claim 72 wherein the step of selecting a filter includes the step of selecting a filter from the group consisting of classical dominance filter, strict dominance filter, superstrict dominance filter, selective superstrict dominance filter, discernible difference dominance filter, two-pass filter, and onionskin filter.

83.   (Original) The method of claim 72 wherein the step of selecting a filter comprises the step of selecting a filter that uses a toleranced dominance relation.

84.   (Original) The method of claim 72 wherein the step of displaying said subset of candidates includes the step of displaying said candidates in a multi-attribute display.

85.   (Original) The method of claim 72 wherein the step of displaying said subset of candidates includes the step of displaying a trade-off scatterplot of said subset of candidates.

86.   (Canceled) The method of claim 72 wherein the step of displaying said subset of candidates includes the steps of:
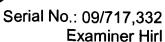
displaying a first selected region of candidates from a first scatterplot in a first color;

displaying a second selected region of candidates in a second scatterplot in a second color;

displaying an intersection between said first selected region and said

second selected region in a third color; and

displaying unselected candidates in a fourth color.

87. (Currently Amended) The method of claim 72 wherein the step of acquiringproviding a plurality of candidates includes the step of locating a plurality of candidate designs for hybrid electric vehicles.

88. (Currently Amended) The method of claim 72 wherein the step of acquiringproviding a plurality of candidates includes the step of selecting a plurality of candidates from the group consisting of candidates for a design task, candidates for planning task, candidates for a purchasing task, and candidates for alternative hypotheses.

89. (Currently Amended) A method for exploring a decision space and making decisions in a computer system for displaying candidates for a decision problem comprising the step steps of:

providing a plurality of candidates composed using a functional and compositional modeling language and evaluated according to a plurality of evaluation criteria;

filtering said plurality of candidates to create a subset of candidates wherein said filtering uses a form of dominance criterion to exclude from said subset of candidates each candidate that is inferior to any other candidate;

displaying on a screen linked scatterplots that show a distribution of candidates along each criteria for said a decision problem.

90. (Original) The method of claim 89 further comprising the step of determining

which candidates in any one of the criteria have been selected.

91. (Original) The method of claim 89 further comprising the step of performing intersections of different selections along different criteria.